



# WISE

## Women in Science and Engineering

Winter 2007

The mission of the Women in Science and Engineering (WISE) Program is to expand and improve educational and professional opportunities for women in all fields of science, technology, engineering and math (STEM) by facilitating individual, institutional, and social change.

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### Director's Notes:

As the new semester begins, I would like to briefly mention two seemingly disparate occurrences that caught my attention at the end of 2006:

First, although most of us enjoyed the unseasonably warm temperatures this past December, the topic of global warming can't help but cross our minds. Recognizing that by the time this newsletter is distributed it may be 30° below zero (this is Iowa after all), there is still no doubt that overall we have seen a trend toward warmer temperatures in Iowa over the last few years. Using summary data provided by the Office of the State Climatologist for 2002-2005, Iowa has experienced above average annual temperatures three of the last four years (range: +0.7° to +1.8°) with 2003 landing right on the average (47.8°). Any guesses for 2006? Looking at monthly averages over the first 11 months of last year, all but two (September and October) were above average with temperatures in January, 2006 averaging 32.2° or 14.4° above normal!

Second, I was greatly heartened by the announcement in December that the Iowa City School Board unanimously approved new requirements for graduation from district high schools, including an additional year of both math and science (from two to three). My kudos to the school board and the ICCSD for recognizing that math and science literacy are no longer optional for ANYONE. Perhaps they will revisit this issue in a few more years to debate the importance of requiring as much math and science as we do English (four years).

So what is the connection between these two occurrences? Global warming on one hand - increased math and science requirements for our high school students on the other? I think one can legitimately be seen as an intervention for the other.

In a country with a long tradition of protecting an individuals' right to make decisions independent of a national or global context, there is little appreciation of the impact an individual decision can make on large-scale environmental degradation. In fact, we use precisely that logic to justify our resistance to changing our individual practices, i.e. "What difference will it make if I choose to buy an eight cylinder gas guzzler over a four cylinder or a hybrid? One vehicle won't make a difference in global warming one way or the other, and I need the extra power to . . . . ." or "I'm not convinced that global warming even exists, but if it does, isn't it the job of scientists and engineers to save us from the tragedies that await if global warming is not controlled? I'm just one person so I can't be expected to fix it!" What's missing is the understanding that a million individual choices determine a very powerful collective choice. By individually opting out of our responsibility to support measures that increase global sustainability, we send a message to the rest of the world that we collectively choose to abdicate responsibility for our current and past actions and their subsequent impact.

So is the desired outcome of increasing math and science requirements in our high schools the development of more scientists and engineers who will save us from ourselves? Perhaps, but in my opinion that should not have been the main impetus for raising standards nor will it be the most significant outcome.

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### WISE Peer Mentoring Program

The WISE Peer Mentoring Program is having a great year!

Our first workshop of the year, "Many Opportunities, Many Choices: Individualizing your Life Style" (presented by Health Iowa) was attended by 75 mentors and mentees. The second workshop "Finding Research, Internship, Study Abroad, and Volunteer Opportunities" was also a big success, with 90 participants. The mentors who served as panelists for workshop #2 were great resources for the participants. Mentors answered questions, told stories, and built excitement about getting involved in research, internship, study abroad, and volunteer experiences.

Two of our more popular workshops take place during the second semester and give students and our corporate sponsor representatives a great opportunity to interact with one another. The January workshop topic varies each year – this year we will be offering "Interview Guidelines and Mock Interviews" in conjunction with the Career Center. Our mentors and mentees always look forward to networking, especially at the annual March workshop, "Career Paths of Women in Science and Engineering."

In between the workshops, WISE mentors and mentees meet on their own to have fun, socialize, and share tips and advice with each other. In the spring semester, WISE will also be offering informational seminars for applying to graduate school and applying to medical school.

Soon we will begin recruiting for the 2007-2008 year (yes, that time is quickly approaching!). Please contact Andrea (andrea-beloy@uiowa.edu) to learn more and to apply to be a mentor or mentee.

WISE thanks the following corporate sponsors for supporting the mentoring program:

Accenture  
Alcoa, Inc.  
Alliant Energy Foundation  
The Caterpillar Foundation  
John Deere Foundation  
Fisher Controls Intl, Inc.  
Maytag Corp. Foundation  
Pioneer Hi-Bred International  
Rockwell Collins



Go  
Hawkeyes!



#### Did you know?

Women receive less than 28% of the computer science bachelor's degrees, down from a high of 37% in 1984. Computer science is the only field in which women's participation has actually decreased over time.

(American Association of University Women (AAUW) "Tech-Savvy: Educating Girls in the New Computer Age" 2000).

### Quotes from current Mentors and Mentees:

"I have really enjoyed my mentor this year!" - mentee  
"This program is very helpful, thanks!" - mentee  
"I just want to say WISE is doing an AWESOME AMAZING JOB THIS YEAR!! All the extra events and activities are so positive and great in getting all the WISE students more involved. Keep up the outstanding work! – mentor



#### Workshop 1: Many Opportunities, Many Choices Individualizing your Life Style

"I thought the workshop went really well. I definitely learned something new and it was helpful to get advice on stress management tips. Thanks!" – mentee  
"I think this workshop was great. The speakers were funny and had awesome tips and information!" – mentor

#### Workshop 2: Finding Research, Internship, Study Abroad, and Volunteer Opportunities

"I really liked this workshop because it helped motivate me to want to get more involved with the University and see all the options there are in college." – mentor  
"I liked this meeting. It was very informative." – mentee

#### Team Meeting 2: (to mentees) What activities did you do for your team meeting?

"We met for coffee and Starbucks and hung out. I loved it!"  
"We got together at my mentor's apartment, baked cookies and watched a movie."  
"We heard Frank McCourt lecture on his new book, Teacher Man. He was awesome!"  
"Met in the IMU, drank coffee and talked!"

## New Programming for Women in STEM:

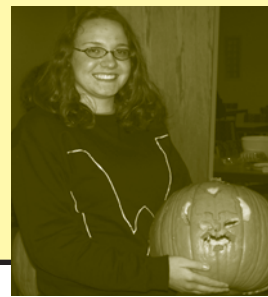
### *WISE-Wide Activities*

WISE is off to a fun start this year. Along with our regular undergraduate programming through the Learning Community, Ambassadors, and Peer Mentoring Program, Kelsey Montross, one of WISE's amazing student assistants, has been scheduling other fun events for our women in science, technology, engineering, and math majors. The purpose of these additional activities is to bring together women from various programs and majors, to connect, network, and take a break from homework.

The first two activities were in October: on the 15th we organized a 'Sunday Supper' at Diamond Dave's in downtown Iowa City, and on the 29th we hosted a pumpkin-carving party in the Currier Hall Multi-purpose Room, complete with snacks and prizes. Both events had good turnout, with women from the Learning Community, Ambassadors, and Peer Mentoring (and some new faces!) coming together for fun and socializing. Planning for more activities is underway – we will be hosting faculty dinners and seminars (applying to graduate school, applying to medical school) early next semester, as well as hosting cookie-decorating and other fun activities throughout the remainder of the year. For more information or to get involved, please contact wise@uiowa.edu.



Pumpkin-carving award winners.



#### **06-Average IOWA temperatures by month**

|           |                |              |
|-----------|----------------|--------------|
| January   | 32.2° or 14.4° | above normal |
| February  | 24.5° or 0.3°  | above normal |
| March     | 36.2° or 0.2°  | above normal |
| April     | 53.6° or 5.1°  | above normal |
| May       | 60.8° or 0.6°  | above normal |
| June      | 70.2° or 0.4°  | above normal |
| July      | 76.2° or 2.4°  | above normal |
| August    | 72.4° or 1.1°  | above normal |
| September | 60.1° or 2.8°  | below normal |
| October   | 48.0° or 2.9°  | below normal |
| November  | 39.1° or 3.5°  | above normal |
| December  | 31.6° or 9.0°  | above normal |

#### **Did you know?**

Average Annual CEO pay is 10.5 million, 369 times average worker pay of \$28,310. In 1970, before the big runup, the multiple was 28:1, a ratio that would make today's average worker pay \$374,800. Put another way: If CEO pay were frozen now, it would take workers 66 years of 4% annual raises to get back to 1/28th of what the boss makes.

-David Henry (Data: Kevin J. Murphy, Uni. of Southern California.)

## The Survey of previous WISE Mentors

In the early spring of 2006, WISE sent a survey to 482 women who had served as mentors in the undergraduate peer mentoring program, Student to Student Support in Science (SSSS), between 1996 and 2006. We were interested in tracking their work and life choices since receiving an undergraduate degree in science, technology, engineering or math (STEM) at The University of Iowa.

The response was far greater than expected (n=319 or 66%), with 27% of respondents graduating with a degree in engineering, and 73% with a degree in some field of science. The distribution among majors was similar to that seen from year to year in SSSS.

The age distribution was as follows: 22-24 years (18%); 25-27 years (36%); 28-30 years (35%); 31-33 (10%) and over 34 years (1%). Slightly more than half were in a committed relationship and 20% reported having at least one dependent (n=64).

In response to the statement, "My single biggest challenge during the last three years has been related to..." over 50% of our respondents identified the issues associated with work-life balance.

This response is similar to one found in a study by Sue V. Rosser of 389 women in academic science and engineering careers, where the highest percentage of respondents identified "Balancing work with family (children, elderly relatives, etc.)" as the most significant issue/challenge/opportunity facing women scientists as they plan their careers today.

Stay tuned!!!! More results from this study will appear in future issues of WISE News!!



# WISE

## Learning Community

### WISE Learning Community – It Was a Fun Fall Semester!

The WISE Learning Community (LC) started off the year with a little friendly competition at the Annual Orientation Picnic, with 75 girls competing in a scavenger hunt for prizes and semester-long bragging rights. The eleven teams consisted of four to six first-year students led by two or three second-year LC members. The two Resident Assistants (RAs) for the WISE LC also participated, as well as some WISE mentors.

The picnic and scavenger hunt took place the first Sunday after classes started when students are still in high spirits and full of energy. This scavenger hunt gives the first-year students a chance to meet people on their floor and form friendships, which is sometimes harder to do once classes get going. As always, it was a lot of fun to watch the women race back anxiously to see what place they finished and what prizes were available. Although the people with the quickest time got their first pick for prizes, everybody who participated in this event was a winner and walked away with a prize!



The WISE LC students also participated in the annual WISE Buffalo Wild Wing dinner in the Old Capitol Mall (above). This event takes place once a semester on a Sunday night, giving the women a break from their intense studying, as well as a free dinner and a fun time. It is amazing to see how many chicken wings some of them can eat!

So if you have not noticed already, there is usually a meal of some sort provided at all of our activities. The same holds true for our annual community enrichment event. Our special guests this year were representing the Iowa City Habitat for Humanity's Women Build Program. They visited Stanley Hall to talk to the women about ways to get involved in their community and with Habitat. The meal of choice for this event was a lasagna dinner from Zio Johnno's. This program was amazing. We had good attendance, and to our pleasant surprise, many of the women have participated in Women Build in their own communities and are excited to do the same in Iowa City. LC members walked away with tons of information about this program and were eagerly discussing with each other dates to actually start building!

### WISE Learning Community STRESS BUSTER!

Every year WISE holds its annual December Stress Buster in the Currier Multipurpose Room. LC residents take a break from their studies by decorating 40 dozen cookies with all manner of strange and wonderful frostings and 'sprinkles', including such things as teeny black, brown and white cows.

The fantastic tasting cut-out cookies are baked by the Neel House Bakery and are made available to WISE at a reduced cost. Yum! Thanks you Todd and Carol Neel!!!

This event is always a great time, as it is a wonderful way to relax with friends, have a stress free afternoon right before finals, and of course EAT SOME COOKIES! The room is filled with cheerful holiday music and the joyful chatter of the LC women.

Although somewhat of a surprise (after watching them eat at Buffalo WildWings!) the LC women could only eat so many of the almost 500 cookies this year, so we donated the remaining cookies to the local Domestic Violence Intervention Program (DVIP) shelter (8 dozen BEAUTIFUL cookies!) and one of the local emergency housing shelters (4 dozen).

This event is definitely a WISE favorite! What a great way to end the semester.



The pictures above are from the December Stress Buster Event

### IBA Scholars Awarded Best Presentations

November 8-12, nine IBA Scholars and two IBA staff traveled to Anaheim, California, for the Annual Biomedical Research Conference for Minority Students (ABRCMS), where our students competed with approximately 1,300 undergraduate scientists from around the country. All nine presentations were phenomenal! In representing themselves, IBA and the University of Iowa so well, they were heavily recruited by top graduate programs throughout the nation. We put Iowa on the map when two of our scholars were honored at the awards banquet.



Senior Shameika Wilmington received Best Oral in the Biochemical Sciences, and junior Wanakee Carr received Best Poster in the Chemical Sciences.

Shameika Wilmington, right and Wanakee Carr, left.

Article courtesy of IBA e-Update, December 1, 2006

By increasing the level of math and science literacy in the general student population, we also increase the probability that, over time, we will develop a more informed, engaged, and scientifically savvy citizenry. That evolution may have significant repercussions in at least three important areas that are heavily impacted by an individual's decision-making processes; personal choice guided by a deeper understanding of basic scientific principles; political choice guided by the ability to better understand scientific information and to recognize when political assertions are or are not based in good science; and, collective choice guided by the recognition that collective action and impact is ultimately driven by individual choice.

According to the U.S. Census Bureau, there are currently about 300,500,000 people living in the U.S., representing approximately 76,858,000 households. Can you imagine the impact of replacing one incandescent bulb with a compact fluorescent bulb in each of those households on a monthly basis? And what if half of the population began serious carpooling or bought a hybrid car? No one can answer those questions based on empirical evidence, but I guess that's the point. We have ample evidence that global warming exists and we know the major contributing factors associated with its inception and acceleration, so it's time to stop imagining and start acting. And I fully understand that it has to start with 'me'.

For more information visit:

<http://www.fightglobalwarming.com>  
<http://www.ecobridge.org>  
<http://www.worldwildlife.org/climate/>  
<http://www.pewclimate.org/global-warming-basics/>

### WISE Ambassadors – 2006-2007!

The Ambassadors have been meeting regularly this semester to plan two very exciting outreach events that will take place spring semester.

The first event, to be held mid-February, is a Girl Scout Badge Day. WISE will be hosting local troops from the Girl Scouts of the Mississippi Valley and providing various opportunities for the participants to earn their 'Science-in-Action' badge. The other event planned is a trivia challenge open to local boys and girls in grades 7-9; this fun activity is aimed at raising awareness of women's contributions to science throughout history. We're expecting a good turnout for both events! If interested in volunteering or sponsoring a portion of an event, please contact [wise@uiowa.edu](mailto:wise@uiowa.edu) and direct your email to Lisa.

The Ambassadors are also organizing tours of local companies/organizations to learn first-hand about various careers. While none are scheduled as of printing, possibilities include touring the UIHC and meeting with employees and medical residents, traveling to an Iowa biodiesel plant, and meeting with engineering alumni at local companies.

### Who are the WISE Ambassadors?

The Ambassadors are a team of both undergraduate and graduate students in science, technology, engineering, and math (STEM) fields who organize and participate in outreach, leadership, and career development experiences. The program is run and kept alive by the enthusiasm and ideas of the Ambassadors, and the WISE office aids their efforts by providing an annual budget, resources, and support. The WISE Ambassadors program is open to all students, and new participants are always welcome.

*"As human-caused biodiversity loss and climate disruption gain ground, we need to keep our sights clear and understand that the measure of a threat is not a matter of whether it is made on purpose, but of how much loss it may cause. It's an ancient habit to go after those we perceive to be evil because they intended to do harm. It's harder, but more effective, to "go after," meaning to more effectively educate and socialize, those vastly larger numbers of our fellow humans who are not evil, but whose behavior may in fact be far more destructive in the long run." (Ed Ayres, editor of Worldwatch magazine, Nov/Dec 2001)*

### Are You Graduating this Year?

WISE is trying to identify young women on campus who:

- have participated in WISE programs during their undergraduate studies at the University of Iowa, and;
- are receiving an undergraduate degree this year (December 2006, May 2007, or August 2007).

IF THAT SOUNDS LIKE YOU OR SOMEONE YOU KNOW, please send an email to [wise@uiowa.edu](mailto:wise@uiowa.edu) and let us know. That way we can invite you and your family to participate in the second annual WISE Graduation Recognition Reception May 13th from 1:30-2:30 p.m.!



### In October, the Ambassadors voted to office leaders for the 2006-2007 year:

- President: Courtney Smith (BME)
- Vice President: Sarah Minner (Pre-pharmacy)
- Secretary: Kendra Meyer (BME)
- Treasurer: Areeba Fatima (Biology)
- K-12 Outreach Chair: Emily Thomas (ChemE Graduate Student)

### ePortfolio Recognized as Best Practice

The American Association of School Personnel Administrators presented the C.S. Robinson Award to Ann Feldmann, executive director of Human Resources for the Cedar Rapids Community School District, along with Educational Placement Director Rebecca Anthony and Educational Technology Center Director John Achrazoglou. The award, recognizing innovative strategies in the Best Practices/Current Research of Professional Development Models, praised the team's efforts and effectiveness in their work with the innovative and highly successful ePortfolio project.

"To help meet state-mandated performance-based teacher evaluation legislation, this team created a web-based ePortfolio, connecting teaching practices and performances to state standards, solved a logistics disarray of managing large volumes of teaching work, and created an effective production, presentation, and communication tool for the early-career evaluation process," said Cathy Skinner, AASPA Recognition Committee Chair. "The teachers relate it as a career-changing initiative—it inspires growth, charts progress, and is an easily reviewed assessment measure."

With the support of the School Administrators and the Association of School Boards, Skinner said, "the project resulted in a model of cooperation between the teacher's association, the district, The University of Iowa, and state agencies that then garnered the thanks of the Department of Education for promoting and paving the way for success of the state initiative for teacher accountability."



### Fall Semester WISE Grad/Postdoc Professional Development Workshops a Success!

WISE offered two of its popular grad/post-doc workshop programs this fall, building on the success of last year's pilot series.

"Developing a Teaching Philosophy and Research Statement in the Sciences and Engineering" was offered in October and led by Carolyn Colvin (Associate Dean, College of Education), Sarah Coggins Mosher (Lecturer, Department of Rhetoric), and Ben Mosher (Tate High School English Teacher). Fourteen participants representing eleven academic departments participated in the two-part program.

The first session provided guidance and insight into how to write teaching philosophies and research statements. The second session provided participants an opportunity to have their work critiqued by up to five other participants and the facilitators. Said one participant, the workshops were a "great way to develop my research and teaching statements, making them ready for when I begin applying for junior faculty positions."

The second program offered was "Developing an ePortfolio in the Sciences and Engineering." Twelve women from seven academic departments took part in developing their own ePortfolio. This highly-successful program was originally created for the College of Education but has been tailored to fit the special needs of STEM disciplines. With a three-to-one instructor-student ratio, each participant was given ample and personalized instruction on how to develop their own professional web presence.

One participant came because she "liked the look of the sample ePortfolios and it seemed like a nice feature for me to have." Many participants commented on their impending job searches and 100% of the participants surveyed agreed that the ePortfolio would be helpful not only for their upcoming job searches, but also for their long-term professional development.

The Grad/Post-Doc workshop series will be expanded in the spring, tentatively with four programs offered. For more information about the series, please email Maria "Tess" Barker at [maria-barker@uiowa.edu](mailto:maria-barker@uiowa.edu).





# Travel Grant & General WISE News

## Dr. Eunice Beam WISE Travel Grant Program

The Eunice Beam WISE Travel Grant committee awards funds to graduate students for the purpose of presenting their work at meetings, symposia, conferences, or other professional or academic gatherings.

The spring submission deadline is February, 2007. For application protocol and form, go to <http://www.uiowa.edu/~wise>.

### Eligibility Requirements:

To be eligible for a WISE Travel Grant the applicant must:

- \* be a graduate student at the University of Iowa
- \* have not received a WISE Travel Grant during the previous fiscal year (July 1-June 30)
- \* follow the application deadlines in order to be considered for the corresponding review period.
- \* be making an oral presentation at a local, regional, or international conference.
- \* be making or have made the presentation within the academic year the grant is applied for.



## WISE Website

WISE's web presence is getting an update! The website is more comprehensive, easily navigable, and up-to-date. The anticipated date for launching this new website is March 2007, so put us in your 'Favorites' and check back often! – <http://www.uiowa.edu/~wise>

## The WISE Resource Library is going online in February! Visit the WISE Website!

The WISE Library has more than 600 items in a variety of formats including books, reports, conference proceedings and multimedia (VHS tapes, CDs, DVDs). Over the summer all of these items have been cataloged using Library of Congress call numbers and subject headings to be consistent with those designations used in the UI Libraries. In some cases, additional keywords have been added to WISE items for special emphasis. Approximately two-thirds of the items in the WISE library collection are unique and not found in the Infohawk catalog for the UI Libraries.

WISE works with K-12 teachers and students and has a collection of items with science, math, and engineering activities. Other areas of focus in the collection include mentoring and gender issues. WISE subscribes to a few journal titles which are not available in the UI Libraries, such as the *Journal of Women and Minorities in Science and Engineering* and *Working Mother*. The latter title includes two issues per year that spotlight the 100 most family-friendly companies and those that are best for multicultural women.

The catalog will soon be available from a link on the WISE website. The catalog will be searchable by author/organization/editor, title, or keyword. Boolean "and" combination searching will be possible for authors and titles. Users will be able to sort the entire list of items in the collection by item types, author, title, or date. Many items will be allowed to circulate for 7 days and all can be used on site in Room 423 Gilmore Hall.

Pictured from top to bottom: Shehre-Banoo Malik, Shan Bao and Vanessa Simmering, the Fall 2006 Travel Grant Recipients.

## Fall 2006 Recipients are:

\*Shehre-Banoo Malik, Evolutionary Biology, Ph.D. anticipated 5/07, *Early evolution of meiosis-specific genes by duplications in protists*, presented at the 16th Meeting of International Society for Evolutionary Protistology, August 1-5, 2006, Wroclaw, Poland.

\*Shan Bao, Mechanical & Industrial Engineering--Human Factors, Ph.D. anticipated 5/08, *Strategic Differences in Mental Rotation Tasks Based on Case Durations*, presented at Human Factors and Ergonomics Society 50th Annual Meeting, October 16-20, 2006, San Francisco, CA.

\*Vanessa Simmering, Developmental Psychology, Ph.D. anticipated 5/08, *From Recall to Discrimination: The Dynamic Neutral Field Theory Generalizes Across Tasks and Development*, presented at The 28th Annual Conference of the Cognitive Science Society with the 5th International Conference on Cognitive Science, July 27-30, 2006, Vancouver, British Columbia, Canada.

For further information about WISE, contact the WISE office at (319) 355-3530 or [wise@uiowa.edu](mailto:wise@uiowa.edu).

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